Scientific Areas of Integrated Review Groups (IRGs)

For a listing of the Scientific Review Officer and membership roster for each study section, click on the study section roster under the study section name within an IRG listed below or go to the study section index (study sections listed alphabetically) and click on the specified roster next to the name of the study section.

Bioengineering Sciences and Technologies IRG [BST]

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Instrumentation and Systems Development Study Section [ISD]

[ISD Membership Roster] [ISD Meeting Rosters]

The Instrumentation and Systems Development Study Section (ISD) considers research applications seeking to design and develop instrumentation and systems for biological research. Proposed projects need not be hypothesis driven but typically represent a novel scientific investigation of a diagnostic or analytical technology. Specific areas covered by ISD include:

- Analytical instrumentation: novel methods for improving throughput in analytical techniques; optical methods; chemical methods; spectroscopy; microfluidics; hardware and computer systems.
- Sensing devices: detection and sensing of single cells; biomarkers; environmental and toxic chemicals; biomedically relevant compounds and molecules; pre-clinical lab-on-a-chip sensing technology.
- Separation technologies: improvements and variations to classical techniques such as electrophoresis and chromatography; cell separations; microfluidics; nanotechnology.
- Automation and integration: design and development of both individual instrumentation modules and integrated systems for biological research or diagnostics.

- Micro/nanofabrication: Microfabricated and/or nanostructured devices and systems for use in biological research or diagnostics.
- Development of high throughput assay systems.

Study sections with most closely related areas of similar science listed in rank order are:

Enabling Bioanalytical and Biophysical Technologies (EBT)
Bioengineering, Technology, and Surgical Sciences (BTSS)
Microscopic Imaging (MI)
Nanotechnology (NANO)
Neurotechnology (NT)

TOP

Gene and Drug Delivery Systems Study Section [GDD]

[GDD Membership Roster] [GDD Meeting Rosters]

The Gene and Drug Delivery Systems (GDD) study section considers grant applications focused on the development and delivery of drugs, genes, and gene products that alter gene function or expression in the living organism. Research grant applications driven by bioengineering principle, design, or validation, but not necessarily driven by hypothesis, are expected. Specific areas covered by GDD include:

- Delivery of nucleic acids, peptide/protein complexes, vaccines, genes, small molecules, antibiotics and other drugs and biomaterials.
- Delivery vehicles including viruses, liposomes, vesicles, nanoparticles, biomaterials, and cells.
- Delivery strategies including electroporation, ultrasound, light, and ballistic methods.
- Study of the physiological barriers to delivery (e.g., membrane, tissue, cellular, trafficking, physical).
- Studies of the interactions of delivery vehicles, devices, and/or payloads with the immune system.

Study sections with most closely related areas of similar science listed in rank order are:

Biomaterials and Biointerfaces (BMBI)
Nanotechnology (NANO)
Developmental Therapeutics (DT)
Microscopic Imaging (MI)
Vaccines Against Microbial Diseases (VMD)

TOP

Biomaterials and Biointerfaces Study Section [BMBI]

[BMBI Membership Roster] [BMBI Meeting Rosters]

BMBI Roster The Biomaterials and Biointerfaces Study Section (BMBI) reviews applications in materials science and the closely allied field of materials surfaces and their interactions with basic biological systems. Applications driven by bioengineering principles and not necessarily driven by hypothesis are typical. The material aspects of biomaterials and surface science concern the design principles and theory and the synthesis, characterization, and optimization of new or existing materials. The biological aspects of biomaterials science concern interactions of materials with proteins, membranes, cells, and tissues. Specific areas covered by BMBI:

- Development and characterization of biomaterials; Self-assembled materials; Design principles, material processing, and combinatorial approaches to the synthesis of new biomaterials; Biocompatibility, toxicity, structure/property relationships, and biodurability.
- New biomaterials and fabrication techniques for tissue engineering, transport and perfusion aspects of tissue engineering, and bioreactors.
- Molecular / cellular interfacial interactions; Non-fouling and bioactive surfaces; Improved understanding of the biology-biomaterials interface; Biosurface characterization and technology; Patterning; Surface characterization at the nano-scale.
- Chip- and micro-array-based microtechnologies and biosensors, with a focus on biorecognition, biocompatibility, nonfouling surfaces, and fouling mechanisms; Includes MEMS (micro-electro-mechanical-systems), lithographic and microfluidic elements.
- Drug and gene delivery systems and nanoparticles, with a focus on the carrier material, fabrication, biocompatibility, and toxicity.

Study sections with most closely related areas of similar science listed in rank order are:

Nanotechnology (NANO)
Instrumentation and Systems Development (ISD)
Enabling Bioanalytical and Biophysical Technologies (EBT)
Gene and Drug Delivery Systems (GDD)
Bioengineering, Technology, and Surgical Sciences (BTSS)

TOP

Biodata Management and Analysis Study Section [BDMA]

[BDMA Membership Roster] [BDMA Meeting Rosters]

The Biodata Management and Analysis (BDMA) study section reviews grant applications concerned with developing technologies for the management and analysis of biological data. This includes the review of bioinformatics and computational biology applications addressing large-scale data collection and integration efforts. Research grant applications driven by bioengineering principle, design, or validation, but not necessarily driven by hypothesis, are expected. Specific areas covered by BDMA are:

- Computer systems for data management including hardware and software.
- Database technologies and methods for data management, data representation, data capture, data integrity and validation, data standards and ontology development,
- Methods for data analysis including: Numerical, statistical, mathematical and theoretical approaches to design and interpretation of large-scale studies such as methods for pattern discovery, data mining, sequence prediction, biomarker identification, therapeutic drug design and high throughput analyses; computational methods for organizing, maintaining, and integrating biological datasets and for large scale data modeling and simulations.
- Visualization techniques including: Summary, integration, and representation of data in meaningful ways with, for example, graphical, auditory, tactile, and visual methods.

Study Sections with the most closely related areas of similar science listed in rank order are:

Biomedical Computing and Health Informatics (BCHI)
Genomics, Computational Biology and Technology (GCAT)
Biostatistical Methods and Research Design (BMRD)
Modeling and Analysis of Biological Systems (MABS)
Macromolecular Structure and Function D (MSFD)

TOP

Modeling and Analysis of Biological Systems Study Section [MABS]

[MABS Membership Roster] [MABS Meeting Rosters]

The Modeling and Analysis of Biological Systems Study Section (MABS) reviews applications concerned with the development of modeling/enabling technologies for understanding the complexity of biological systems. The scope of these systems ranges from molecular, to supramolecular, to organelles, to cellular, to tissue and to organ level studies. Applications driven by mathematical and bioengineering principles but not necessarily driven by hypothesis are typical. Tools being developed are characteristically applied to further understanding of interactions and integrations through levels and scales and the emergence of patterns that help to explain system behavior. Specific areas covered by MABS include:

- Modeling methods: computational and analytical approaches for model construction, analysis and verification.
- Development and adaptation of mathematical methods and models: deterministic and stochastic, Boolean, discrete and continuous; dynamical systems analysis; timescale and spatial decomposition; numerical methods; statistical tools including time series analysis and Bayesian methods.
- Specific models of important processes: molecular interactions, signal transduction; biochemical networks; gene regulatory networks; metabolic networks; intracellular dynamics; cell structural dynamics; cell communication; tissue physiology; biomechanics; and biofluidics.
- Integration of modeling and experiment: experimental validation of models; high-throughput data integration; computer simulations of multiscale systems.

Study sections with most closely related areas of similar science listed in alphabetical order are:

Biodata Management and Analysis Study Section (BDMA)
Cell Structure and Function Study Section (CSF)
Genomics, Computational Biology and Technology Study Section (GCAT)
Hypertension and Microcirculation Study Section (HM)
Macromolecular Structure and Function D Study Section (MSFD)

TOP

Microscopic Imaging Study Section [MI]

[MI Membership Roster] [MI Meeting Rosters]

The Microscopic Imaging study section (MI) reviews applications that aim to develop, improve and implement instrumentation, methods, and quantitative techniques for the static and dynamic visualization of molecules, macromolecular machines and complex organelles, cells, and model systems in physiologically active states. Applications driven by mathematical and bioengineering principles but not necessarily driven by hypothesis are typical. Imaging principles, instrumentation, or probes may be developed. Specific areas covered by MI:

- Development and improvement of instrumentation for microscopy, including optical, near-field, vibrational and Raman, electron, and transmission (soft) X-ray. Also included are automated and remote access microscopy methods.
- Development of sub-cellular and cellular imaging probes, including those for optical, electron, and NMR microscopies.
- Image acquisition and analysis, including validation of image formation theory, light propagation and scattering analysis, algorithm development, tomographic and single particle reconstruction (cryo-EM), visualization of multi-dimensional information, and high-throughput, automatic data processing at the sub-cellular and cellular level.
- Data mining techniques, including integration of information derived from complementary imaging techniques and bioinformatics to derive functional mechanisms.

Study sections with most closely related areas of similar science listed in rank order are:

Clinical Molecular Imaging and Probe Development (CMIP)
Instrumentation and Systems Development (ISD)
Nanotechnology (NANO)
Biodata Management and Analysis (BDMA)
Enabling Bioanalytical and Biophysical Technologies (EBT)

TOP

Nanotechnology Study Section [NANO]

[NANO Membership Roster] [NANO Meeting Rosters]

The Nanotechnology Study Section (NANO) reviews applications focused on fundamental aspects of bioengineering and technology development based on the unique properties of materials at the nanometer scale. Nanotechnology draws from the disciplines of physics, chemistry, materials science, and bioengineering. A premise is that basic research and early technology development, prior to specific practical use will be reviewed. Specific areas include:

- Studies of the unique properties of materials at the nanoscale.
- Design, synthesis, and development of nanostructures, nanodevices, and nanosystems.
- Nanotechnology based research in complex biological/medical problems.
- Nanotechnology in cellular imaging, sensing, and drug/gene delivery.
- Biocompatibility and toxicities associated with nanomaterials.

Study sections with most closely related areas of similar science listed in rank order are:

Biomaterials and Biointerfaces Study Section (BMBI)
Gene and Drug Delivery Systems Study Section (GDD)
Instrumentation and Systems Development (ISD)

Enabling Bioanalytical and Biophysical Technologies Study Section (EBT)
Medical Imaging (MEDI)

TOP

Bioengineering Sciences and Technologies Small Business Activities [SBIR/STTR] Special Emphasis Panels

The Bioengineering Sciences and Technology IRG reviews small business applications within all of the research areas covered in our regular study sections, plus the additional areas highlighted below. Some SBIR/STTR applications are reviewed in the context of regular study sections [Instrumentation and Systems Development [ISD], Biodata Management and Analysis [BDMA], Modeling and Analysis of Biological Systems [MABS], Microscopic Imaging [MI]], whereas other SBIR/STTR applications are reviewed in one of the following four special emphasis panels: xml:namespace prefix = "o" ns = "urn:schemas-microsoft-com:office:office" />

Delivery Systems and Nanotechnology SBIR/STTR SEP [DSN SEP - BST (10)]

[BST (10) Roster]

The Delivery Systems and Nanotechnology SBIR/STTR SEP reviews small business applications in the general areas of new strategies, devices, vectors, and agents for delivering genes or drugs into cells or organisms.

Specific areas covered by the DSN SEP include:

- Viral and nonviral vectors for gene delivery
- Genetic expression systems
- Loaded nanomaterials, time release formulations, and other delivery vehicles
- Devices and instrumentation for gene and drug delivery
- Manufacturing processes for production of delivery vectors or vehicles
- Initial testing of devices, vectors or vehicles in cellular and animal models

The DSN SEP shares the following interests within the BST IRG:

- **With the Materials Science and Environmental Monitoring SEP [MSEM SEP - BST (11)]:** The Delivery Systems and Nanotechnology SBIR SEP shares interests with the MSEM SBIR SEP in the development of nanoparticles and other nano-scale materials. If the emphasis is on the development of nano-scale materials and their initial testing *in vivo*, including cellular and/or animal systems, then assignment to the DSN SEP may be appropriate. If the emphasis is on the development of nanomaterials and their initial testing *in vitro*, including cell lines, then assignment to the MSEM SEP may be appropriate.

- **With the Devices and Detection Systems SEP [DDS SEP - BST (12)]:** The Delivery Systems and Nanotechnology SEP shares interests with the DDS SEP in the development of devices and instrumentation. If the emphasis is on the development of devices and instrumentation for delivering genes and drugs into cells and organisms, then assignment to the DSN SEP may be appropriate. If the emphasis is on the development of devices and instrumentation for application in other biomedical, pharmaceutical, or research settings, then assignment to the DDS SEP may be appropriate.

- **With the Assays and Methods Development SEP [AMD SEP - BST (13)]:** The Delivery Systems and Nanotechnology SEP shares interests with the AMD SEP in the development of devices, vectors, and vehicles for delivering genes and drugs into cells and organisms; monitoring the activities of the delivered agents; and manufacture of pharmaceutical-grade delivery vectors. If the emphasis is on development of instrumentation and agents on a small scale or testing them in cellular or animal models, then assignment to the DSN SEP may be appropriate. If the emphasis is on development or scale-up of instrumentation and agents on a large scale, then assignment to the AMD SEP may be appropriate.

- **With the Microscopic Imaging Study Section [MI]:** The Delivery Systems and Nanotechnology SEP shares interests with the MI study section in the development of imaging instrumentation and genetic reporter systems. If the emphasis is on the development of imaging instrumentation and genetic reporter systems for use in monitoring the efficiency or activity of genes or drugs delivered for an eventual therapeutic purpose, then assignment to the DSN SEP may be appropriate. If the emphasis is on the development of imaging instrumentation and genetic reporter systems for use in visualizing the activities of cells or molecules to address a biological or biomedical question, then assignment to the MI study section may be appropriate.

The DSN SEP shares the following interests outside the BST IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** The Delivery Systems and Nanotechnology SEP shares interests with the BCMB IRG in the formulation and synthesis of new materials and vehicles. If the emphasis is on the development of new materials and vehicles for delivering agents into cells or organisms, or to elucidate engineering principles, then assignment to the DSN SEP may be appropriate. If the emphasis is on the development of new materials and vehicles to elucidate biochemical or biophysical principles, or on the application of existing technologies to biochemical or biophysical problems, then assignment to the BCMB IRG may be appropriate.

- **With the Genes, Genomes, and Genetics [GGG] IRG:** The Delivery Systems and Nanotechnology SEP shares interests with the GGG IRG in the area of gene therapy. If the emphasis is on the development and initial testing of delivery devices, vectors and vehicles, even if their eventual intended use is gene therapy, or to elucidate engineering principles, then assignment to the DSN SEP may be appropriate. If the emphasis is on the use of existing devices, vectors, or vehicles to ameliorate an inborn error, then assignment to the GGG IRG may be appropriate.

- **With the Oncological Sciences [ONC] IRG:** The Delivery Systems and Nanotechnology SEP shares interests with the ONC IRG in the development of devices, vectors, or vehicles for delivering genes and drugs. If the emphasis is on the development and initial testing of new technology for delivering genes and drugs into cells or biological systems, including tumors, or to elucidate engineering principles, then assignment to the DSN SEP may be appropriate. If the emphasis is on the application of existing technology for delivering genes and drugs into tumors and monitoring therapeutic results, or for elucidating biological mechanisms related to oncology or therapeutics, then assignment to the ONC IRG may be appropriate.

- **With the Surgical Sciences, Biomedical Imaging, and Bioengineering [SBIB] IRG:** The Delivery Systems and Nanotechnology SEP shares interests with the SBIB IRG in the area of anesthesiology and drug delivery. If the emphasis is on the development of new delivery systems and their initial testing in cellular or animal systems, then assignment to the DSN SEP may be appropriate. If the emphasis is on the application of existing technology or testing of new technologies in clinical/surgical settings, then assignment to the SBIB IRG may be appropriate.

Materials Science and Environmental Monitoring SBIR/STTR SEP [MSEM SEP - BST (11)]

[BST (11) Roster]

The Materials Science and Environmental Monitoring SBIR/STTR SEP reviews small business applications in the general areas of new surfaces, coatings, and materials, and technology for environmental and biodefense purposes.

Specific areas covered by the MSEM SEP include:

- Biosensors, chips, and other platforms for detecting chemicals, toxins, and pathogens in the environment or workplace
- Materials, coatings, and surfaces for use in gene and drug delivery, medical devices and implants, biosensors, detectors, and manufacturing settings
- Nano-scale materials, nanoparticles, and surface phenomena
- Tissue engineering, cell/scaffold interactions, cellular assays of toxicity and tolerance
- Platforms, devices, and manufacturing practices for reducing chemicals, toxins, and pathogens in the environment or workplace

The MSEM SEP shares the following interests within the BST IRG:

- **With the Delivery Systems and Nanotechnology SEP [DSN SEP - BST (10)]:** The Materials Science and Environmental Monitoring SEP shares interests with the DSN SEP in the development of devices and instrumentation. If the emphasis is on the development of devices and instrumentation for use in the environment, workplace, or industrial setting, then assignment to the MSEM SEP may be appropriate. If the emphasis is on the development of devices and instrumentation for delivering genes and drugs into cells and organisms, then assignment to the DSN SEP may be appropriate.
- **With the Devices and Detection Systems SEP [DDS SEP - BST (12)]:** The Materials Science and Environmental Monitoring SEP shares interests with the DDS SEP in the development of instrumentation and detection technology. If the emphasis is on development of devices or instrumentation for use in the environment, workplace, or industrial setting, then assignment to the MSEM SEP may be appropriate. If the emphasis is on development of devices or instrumentation for use in the biomedical, pharmaceutical, or research setting, then assignment to the DDS SEP may be appropriate.
- **With the Assays and Methods Development SEP [AMD SEP - BST (13)]:** The Materials Science and Environmental Monitoring SEP shares interests with the AMD SEP in the development of assays and materials. If the emphasis is on the development of assays and materials for screening the environment, workplace, or industrial setting, then assignment to the MSEM SEP may be appropriate. If the emphasis is on development of assays and materials for screening in the biomedical, pharmaceutical or research setting, then assignment to the AMD SEP may be appropriate.

The MSEM SEP shares the following interests outside the BST IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** The Materials Science and Environmental Monitoring SEP shares interests with the BCMB IRG in the areas of materials science and biosensors. If the emphasis is on the development of new materials or biosensors for use in biomedical, pharmaceutical, or research settings, or to elucidate engineering principles, then assignment to the MSEM SEP may be appropriate. If the emphasis is on elucidation of biophysical or biochemical principles that may be used to understand materials or to

develop biosensors, or on the application of existing technology to biophysical research problems, then assignment to the BCMB IRG may be appropriate.

- **With the Surgical Sciences, Biomedical Imaging, and Bioengineering [SBIB] IRG:** The Materials Science and Environmental Monitoring SEP shares interests with the SBIB IRG in the area of medical devices, medical sensors, and implants. If the emphasis is on the development of new coatings, surfaces, or materials for eventual use in medical devices, sensors, or implants, or to elucidate basic bioengineering principles, then assignment to the MSEM SEP may be appropriate. If the emphasis is on the application or testing of existing coatings, surfaces, or materials in medical devices, sensors, or implants, or to elucidate bioengineering principles related to clinical applications, then assignment to the SBIB IRG may be appropriate.

Devices and Detection Systems SBIR/STTR SEP

[DDS SEP: BST (12)]

[BST (12) Roster]

The Devices and Detection Systems SBIR/STTR SEP reviews small business applications in the general area of instrumentation and systems development, and related engineering principles.

Specific areas covered by the DDS SEP include:

- Chips, microarrays, and other platforms for molecular separations and screens, immunoassays, chemical reactions, and molecular detection
- Non-invasive biosensors for detecting or measuring drugs or other analytes in bodily fluids
- Portable devices for point-of-care use, first response, or field monitoring
- Microfluidic, nanofluidic, and robotic systems
- Detectors and signal capture systems for use in instrumentation, molecular screens, and immunoassays
- Power supplies, battery design, and other electrochemical devices

The DDS SEP shares the following shared interests within the BST IRG:

- **With the Delivery Systems and Nanotechnology SEP [DSN SEP - BST (10)]:** The Devices and Detection Systems SEP shares interests with the DSN SEP in the development of devices and instrumentation. If the emphasis is on the development of devices and instrumentation for delivering genes and drugs into cells and organisms, then assignment to the DSN SEP may be appropriate. If the emphasis is on the development of devices and instrumentation for application in other biomedical, pharmaceutical, or research settings, then assignment to the DDS SEP may be appropriate.
- **With the Materials Science and Environmental Monitoring SEP [MSEM SEP - BST (11)]:** The Devices and Detection SEP shares interests with the DDS SBIR SEP in the development of detection technology and instrumentation. If the emphasis is on development of devices or instrumentation for use in the environment, workplace, or industrial setting, then assignment to the MSEM SEP may be appropriate. If the emphasis is on

development of devices or instrumentation for use in biomedical, pharmaceutical, or research settings, then assignment to the DDS SEP may be appropriate.

- **With the Assays and Methods Development SEP [AMD SEP - BST (13)]:** The Devices and Detection SEP shares interests with the AMD SEP in the development of chips, sensors, platforms, and detectors. If the emphasis is on development of these devices for use in small-scale settings, then assignment to the DDS SEP may be appropriate. If the emphasis is on development of these devices for use in large-scale or high throughput settings, then assignment to the AMD SEP may be appropriate.

The DDS SEP shares the following interests outside of the BST IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** The Devices and Detection Systems SEP shares interests with the BCMB IRG in the area of instrumentation technology. If the emphasis is on the development of new instrumentation to detect or measure a specific molecule or analyte, or to elucidate engineering principles, then assignment to the DDS SEP may be appropriate. If the emphasis is on the development of instrumentation for elucidating biochemical or biophysical principles, or the application of existing instrumentation to biochemical or biophysical problems, then assignment to the BCMB IRG may be appropriate.

- **With the Surgical Sciences, Biomedical Imaging, and Bioengineering [SBIB] IRG:** The Devices and Detection Systems SEP shares interests with the SBIB IRG in the area of instrumentation development. If the emphasis is on the development of non-invasive, hand-held, or portable instrumentation, even if intended for eventual use in clinical or health care settings, or to elucidate basic bioengineering principles, then assignment to the DDS SEP may be appropriate. If the emphasis is on the development of instrumentation for use in surgery, medical implantation, or other clinical applications, then assignment to the SBIB IRG may be appropriate.

Assays and Methods Development SBIR/STTR SEP

[AMD SEP - BST (13)]

[BST (13) Roster]

The Assays and Methods Develop SBIR/STTR SEP reviews small business applications in the general areas of high throughput (HTP) molecular assays, large-scale reactions, and HTP screening.

Specific areas covered by the AMD SEP include:

- Reporter systems for monitoring molecular interactions, drug candidates, and molecular or cellular activity
- Chips, microarrays, biosensors, and other HTP platforms
- Instrumentation, fluidics, and robotics for HTP assays or large-scale screens
- Large-scale assays for genomic, proteomic, and metabolomic stud ies
- Large-scale synthesis of biological molecules or drugs

- Technology for the manufacture of biological molecules or drugs, including production and purification of recombinant proteins or designer molecules

- Synthetic biology

The AMD SEP has the following shared interests within the BST IRG:

- **With the Delivery Systems and Nanotechnology SBIR/STTR SEP [DSN BST (10)]:** The Assays and Methods Development SBIR/STTR SEP shares interests with the DSN SEP in the development of devices, vectors, and vehicles for delivering genes and drugs into cells and organisms; monitoring the activities of the delivered agents; and manufacture of pharmaceutical-grade delivery vectors. If the emphasis is on the large-scale development or scale-up of devices, vectors, and vehicles, then assignment to the AMD SEP may be appropriate. If the emphasis is on development of devices, vectors, or vehicles on a small scale or testing them in cellular or animal models, then assignment to the DSN SEP may be appropriate.

- **With the Materials Science and Environmental Monitoring SBIR/STTR SEP [MSEM BST (11)]:** The Assays and Methods Development SBIR/STTR SEP shares interests with the MSEM SEP in the development of surfaces, coatings, and materials, as well as assays, biosensors, platforms, and methods. If the emphasis is on the development of technology for use in the biomedical, pharmaceutical, or research setting or manufacture, then assignment to the AMD SEP may be appropriate. If the emphasis is on the development of technology for use in environmental science, occupational safety, or biodefense, then the MSEM SEP may be appropriate.

- **With the Devices and Detection Systems SEP [DDS BST (12)]:** The Assays and Methods Development SEP shares interests with the DDS SEP in the development of chips, sensors, platforms, and detectors. If the emphasis is on the development of these devices for use in large-scale or HTP science, then assignment to the AMD SEP may be appropriate. If the emphasis is on the development of these devices for use in small-scale settings, then assignment to the DDS SEP may be appropriate.

- **With the Microscopic Imaging study section [MI]:** The Assays and Methods Development SEP shares interests with the MI study section in the development of imaging technology to monitor cellular or molecular activity. If the emphasis is on the development of imaging technology for use in large-scale or HTP settings, then assignment to the AMD SEP may be appropriate. If the emphasis is on the development of imaging technology for use in small-scale settings, then assignment to the MI study section may be appropriate.

The AMD SEP has the following shared interests outside the BST IRG:

- **With the Biological Chemistry and Macromolecular Biophysics [BCMB] IRG:** The Assays and Methods Development SEP shares interests with the BCMB IRG in tools and instrumentation, and in drug discovery and development. If the emphasis is on technology development or elucidating engineering principles, then assignment to the AMD SEP may be appropriate. If the emphasis is on elucidating biochemical or biophysical principles for use in developing new tools, instrumentation, or drug discovery, or on the application of existing technology to these problems, then assignment to the BCMB IRG may be appropriate.

- **With the Cell Biology [CB] IRG:** The Assays and Methods Development SEP shares interests with the CB IRG in assays and systems for monitoring cellular activity. If the emphasis is on technology development for use in high throughput settings, monitoring a variety of biological activities, or elucidating engineering principles, then assignment to the AMD SEP may be appropriate. If the emphasis is on the development of systems to address individual questions related to cell biology, or application of existing technology to individual research problems, then assignment to the CB IRG may be appropriate.

- **With the Genes, Genomes, and Genetics [GGG] IRG:** The Assays and Methods Development SEP shares interests with the GGG IRG in technology for genomic studies. If the emphasis is on technology development, HTP settings, or elucidating engineering principles, then assignment to the AMD SEP may be appropriate. If the emphasis is on the

application of existing technology to individual research problems, or elucidating genetic principles or the genome, then assignment to the GGG IRG may be appropriate.

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Technology Development Fellowship Special Emphasis Panel [F14]

[F14 Roster]

The Technology Development panel reviews fellowship applications that focus on fundamental aspects of bioengineering and technology development in their early stages, before specific practical uses are proven. Fellowship applications need not be hypothesis-driven and may focus on the development of specific products, methods, or principles. Specific areas include:

- Gene and drug delivery systems.
- Biomaterials, biointerfaces, tissue engineering.
- Data management and archiving, bioinformatics algorithms, grid computing, ontologies, data mining, representation and visualization.
- Mathematical modeling and computational biology.
- Instrumentation and systems for the analysis, detection, separation, synthesis, and screening of biological and medicinal molecules and cells.
- Microscopic imaging technology; image analysis and management.

Study sections with most closely related areas of similar science listed in rank order are:

F15: Bioengineering and Imaging
F04A: Chemical and Bioanalytical Sciences
F04B: Biophysical and Biochemical Science
F05: Cell Biology and Development
F08: Genomics, Genetics, DNA Replication, and Gene Expression

TOP

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